UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,710	07/08/2005	Hiroshi Usui	082416-001200US	4051

20350 7590 08/10/2009

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER	
TRAN, NGUYEN	
ART UNIT	PAPER NUMBER
2838	
MAIL DATE	DELIVERY MODE
08/10/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,710	USUI, HIROSHI	
	Examiner	Art Unit	
	NGUYEN TRAN	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Claims 3-11 are pending; claims 1-2 are cancelled.

Applicant's arguments with respect to claim 3-10 have been considered but are moot in view of the new ground(s) of rejection.

Furthermore, In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., see the remarks on pages 8-9; and wherein a capacitor is allowed to discharge when the load is light, and to resume/restart charging after elapse of a predetermined time on page 10) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usui et al. (US 20050201123) in view of Yoshinaga et al. (US 20020145888).

Regarding claim 3: Usui et al. discloses **fig. 2** a power supply comprising:

a transformer (T) **T** having a primary winding **P** and a secondary winding **S** and a third winding **C**;

a DC voltage input section (2) **2, C1** which receives an AC voltage **1** and applies a DC voltage **(output 2)** that is said input AC voltage rectified and smoothed to said primary winding of said transformer (**T**) **T**;

a switching section (Q 1) **Q1** which generates a voltage on said primary winding **P** of said transformer (T) **T** by switching a current flowing **(current flow through P)** in said primary winding **P** of said transformer (T) **T**;

a rectifying and smoothing section (4) **D51, C51** which rectifies and smoothes a voltage generated on said secondary winding **S** of said transformer (T) **P**, and supplies the rectified smoothed voltage **Vout** to said load,

a drive control section (6) **4** which supplies a pulse signal **(output of 4)** for said switching section (Q1) **Q1** to switch said current **(current flow through P)** to said switching section (Q1) **Q1** as the drive signal **(drive signal of 4)**, thereby driving and controlling said switching section (Q1) **Q1**;

a capacitor (C3) **C2** which applies a charged voltage **(output of C2)** to a power line **(connection line from C2 to drive control section 4)** of said drive control section (6) **4** as the drive control voltage;

a charge circuit section (13, 14, R21) **5a** which supplies a current **(output of 5a)** to said capacitor (C3) **C2** from said DC voltage input section (2) **2, C1** to charge said capacitor (C3) **C2** when said DC voltage input section (2) **2, C1** starts inputting a DC voltage to said primary winding **P** of said transformer (T) **T [paragraph 40-43]**;

an auxiliary power supply section (7) **D3, C3** which rectifies a voltage generated on said third winding (n3) **C** of said transformer (T) **T** and applies that voltage to said capacitor (C3) **C2** to charge said capacitor (C3) **C2 [paragraph 40-43]**;

a charge control section (17) **(5a, Q3, D4, also including 4)** which stops charging of said capacitor (C3) **C2** from said charge circuit section (13, 14, R21) **5a** when the drive control voltage **(output of 4)** to be supplied to said power line of said drive control section (6) **4** becomes equal to or greater than a preset voltage value **[paragraph 39-43 and 50-56]**;

a time measuring section (16) **(figure 3, in order to provide a time intervals between t0-12, the circuit of figure 2 is implicitly provides a timer measuring section)** which measures a time after said operation stop section (15) **(i.e. after t4)** stops the operation of said drive control section (6) **4 [paragraph 50]**, and outputs a switch-on signal **(i.e. after t4, the start-up circuit 5a is switched from the constant voltage circuit to the constant current circuit to charge the capacitor C2)** to said charge control section (17) **5a** when a preset time elapses since measuring **(i.e. after t4)**, wherein said charge control section (17) **5a** resumed charging said capacitor **C2** from said charging circuit when said switch-on signal is output from said time measuring unit **[see figure 3; and paragraph 0050-0056]**.

Usui et al. does not specifically discloses an operation stop section (15) **10** which detects an output current to be supplied to said load, compares a current value of said detected output current with said preset current value, and stops an operation of said

drive control section (6) when the current value of said detected output current becomes less than the preset current value.

Yoshinaga et al. teaches that it is desirable to have a comparator in a switching power supply capable of providing stable oscillation and output [0005], wherein an operation stop section (15) which detects an output current to be supplied to said load, compares a current value of said detected output current with said preset current value (**Fig. 1, CMP5**) [0037].

Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to have placed the current comparator Usui et al.'s invention as taught by Yoshinaga with a reasonable expectation of success because Yoshinaga et al. teaches that it is desirable to have a comparator in a switching power supply capable of providing stable oscillation and output [0005].

Regarding claim 4: **fig. 2** wherein said charge circuit section is constituted by inserting, between said DC voltage input section (2) and one end of said capacitor (C3): a constant current supply section (14) which supplies a constant current to said capacitor (C3); and a switch (13) which is closed when said DC voltage input section starts inputting the DC voltage to said primary winding of said transformer.

Regarding claim 5: **fig. 2** wherein said charge circuit section is constituted by inserting, between said DC voltage input section (2) and one end of said capacitor (C3): a resistor (R21); and a switch (13) which is closed at a time of activation when said DC voltage input section (2) starts inputting the DC voltage to said primary winding of said transformer.

Regarding claim 6: **fig. 2 and 3** wherein said charge control section comprises a switch control section (17) which stops charging of said capacitor (C3) from said charge circuit section (13, 14, R21), and said time measuring section (16) measures a time after said operation stop section (15) stops the operation of said drive control section (6), and outputs a switch-ON signal to close said switch (13) to said switch control section (17) when a preset time elapses since measuring.

Regarding claim 7: **fig. 2 and 3** wherein a resistor (R22) is connected to both ends of said capacitor (C3), and said time measuring section (16) considers that the preset time has elapsed when a voltage across said capacitor (C3) becomes equal to or lower than a predetermined value after said operation stop section (15) has stopped the operation of said drive control section (6), and outputs said switch-on signal to said charge control section (17).

Regarding claim 8: Usui et al. discloses **fig. 2** a power supply comprising:

a transformer (T) **T** having a primary winding **P** and a secondary winding **S** and a third winding **C**;

a DC voltage input section (2) **2, C1** which receives an AC voltage **1** and applies a DC voltage **(output 2)** that is said input AC voltage rectified and smoothed to said primary winding of said transformer (T) **T**;

a switching section (Q 1) **Q1** which generates a voltage on said primary winding **P** of said transformer (T) **T** by switching a current flowing **(current flow through P)** in said primary winding **P** of said transformer (T) **T**;

a rectifying and smoothing section (4) **D51, C51** which rectifies and smoothes a voltage generated on said secondary winding **S** of said transformer (T) **P**, and supplies the rectified smoothed voltage **Vout** to said load,

a drive control section (6) **4** which supplies a pulse signal **(output of 4)** for said switching section (Q1) **Q1** to switch said current **(current flow through P)** to said switching section (Q1) **Q1** as the drive signal **(drive signal of 4)**, thereby driving and controlling said switching section (Q1) **Q1**;

a capacitor (C3) **C2** which applies a charged voltage **(output of C2)** to a power line **(connection line from C2 to drive control section 4)** of said drive control section (6) **4** as the drive control voltage;

a charge circuit section (13, 14, R21) **5a** which supplies a current **(output of 5a)** to said capacitor (C3) **C2** from said DC voltage input section (2) **2, C1** to charge said capacitor (C3) **C2** wherein said DC voltage input section (2) **2, C1** stats inputting a DC voltage to said primary winding **P** of said transformer (T) **T [paragraph 40-43]**;

an auxiliary power supply section (7) **D3, C3** which rectifies a voltage generated on said third winding (n3) **C** of said transformer (T) **T** and applies the rectified voltage to said capacitor (C3) **C2** to charge said capacitor (C3) **C2 [paragraph 40-43]**;

a discharge control section (13, 17) **(5a, Q3, D4, also including 4)** which discharges a voltage of said capacitor (C3) **C2** when a discharge instruction signal is supplied **[paragraph 39-43 and 50-56]**; and

a time measuring section (16) **(figure 3, in order to provide a time intervals between t0-12, the circuit of figure 2 is implicitly provides a timer measuring**

section) which supplies said discharge instruction signal to said discharge control section (13, 17) when said operation stop section (15) stops an operation of said drive control section (6) **4 [paragraph 50]**, and stops supplying the discharge instruction signal to said discharge control section (13, 17) when a preset time elapses **(i.e. after t4)** after time measuring wherein said discharge control unit (13, 17) causes said capacitor (C3) **C2** to discharge during the supply of the discharge signal from said time measuring section (16), and then causes the charge circuit section (14R, R21) to restart charging to said capacitor (C3) **C2 [see figure 3; and paragraph 0050-0056]**.

Usui et al. does not specifically discloses an operation stop section (15) **10** which detects an output current to be supplied to said load, compares a current value of said detected output current with said preset current value, and stops an operation of said drive control section (6) when the current value of said detected output current becomes less than the preset current value.

Yoshinaga et al. teaches that it is desirable to have a comparator in a switching power supply capable of providing stable oscillation and output [0005], wherein an operation stop section (15) which detects an output current to be supplied to said load, compares a current value of said detected output current with said preset current value (**Fig. 1, CMP5**) [0037].

Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to have placed the current comparator Usui et al.'s invention as taught by Yoshinaga with a reasonable expectation of success because

Yoshinaga et al. teaches that it is desirable to have a comparator in a switching power supply capable of providing stable oscillation and output [0005].

Regarding claim 9: **fig. 2 and 3** wherein said charge circuit section comprises a current supply section (14) which supplies a current to said capacitor (C3), and said discharge control section comprises: a switch (13) which is open at a time of activation when said DC voltage input section (2) starts inputting the DC voltage to said primary winding of said transformer (T); and a switch control section (17) which closes said switch (13) to discharge the voltage of said capacitor (C3), when said operation stop section (15) stops the operation of said drive control section (6).

Regarding claim 10: **fig. 2 and 3** wherein said charge circuit section comprises a resistor inserted between said DC voltage input section (2) and said capacitor (C3), and said discharge control section comprises: a switch (13) which is open when said DC voltage input section (2) starts inputting the DC voltage to said primary winding of said transformer (T); and a switch control section (17) which closes said switch (13) to discharge the voltage of said capacitor (C3), when said operation stop section (15) stops the operation of said drive control section (6).

Regarding claim 11: the method steps will be met during the normal operation of the apparatus described above. (**Examiner notes:** For method claims, note that under MPEP 2112.02, the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the

claimed method, it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986). Therefore the previous rejections based on the apparatus will not be repeated).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGUYEN TRAN whose telephone number is (571)270-1269. The examiner can normally be reached on M-F 7:30-5:00, OFF every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayprakash N. Gandhi can be reached on 571-272-3740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NT

/MATTHEW V NGUYEN/

Primary Examiner, Art Unit 2838